

REMARKS

Claims 1-4, 6, 8-11, 18, 22 and 24-31 are pending in this application. By this Amendment, claims 18, 22, 29 and 31 are amended. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to new objections raised in the final rejection. Entry of the amendments is thus respectfully requested.

Reconsideration of the application is respectfully requested. Applicant respectfully submits that all pending claims are in condition for allowance.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Song and Examiner Glick in the November 5, 2003 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

I. **AMENDED ABSTRACT**

The Office Action indicates that the May 5 Amendment did not include the amended abstract. For the Examiner's convenience, Applicant resubmits the amended abstract herewith on a separate page.

II. **OBJECTION TO CLAIMS 18, 22, 29 and 31**

The Office Action objects to claims 18, 22, 29 and 31 "because they attempt to define a manufacturing process without setting forth any of the steps involved in the manufacturing process." Applicant respectfully disagrees. However, to advance prosecution, and without narrowing the claims, claims 18, 22, 29 and 31 are amended to delete the phrase "a process

for" and to use "further comprising" language to obviate the objection, as discussed at the personal interview. Claims 18, 22, 29 and 31 now clearly recite a method including a forming step. Accordingly, withdrawal of this objection is respectfully requested.

Claim 29 is further objected to because there is insufficient antecedent basis for "the wafer". Claim 29 is amended to recite "the second object" to correct this informality. It is respectfully submitted that claim 29 is not narrowed by such amendment. Withdrawal of this objection is also respectfully requested.

III. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

The Office Action rejects claims 1-4, 6, 8-11, 18, 22 and 24-31 under 35 U.S.C. §102(b) over U.S. Patent No. 5,526,093 to Takahashi. This rejection is respectfully traversed.

Takahashi fails to teach or suggest all the features recited in independent claims 1, 10, 24 and 30. In particular, Takahashi does not disclose "setting a transmittance of a light reducing member disposed in an optical path of the exposure beam based on at least one target exposure level" as recited in claim 1.

Further, Takahashi does not disclose that "the transmittance is determined so as to satisfy a predetermined condition when exposing a divided region having a minimum target exposure level", that "a transmittance of the light attenuator is determined so as to satisfy a predetermined condition when exposing a divided region having a minimum exposure target level", "determining a transmittance of a light attenuator disposed in an optical path of an exposure beam so as to satisfy a predetermined condition when exposing a divided region having a minimum target exposure level" or "means for determining a transmittance of a light attenuator disposed in an optical path of an exposure beam so as to satisfy a predetermined condition when exposing a divided region having a minimum target exposure level" as recited in claims 1, 10, 24 and 30, respectively.

Still further, Takahashi does not disclose "adjusting a parameter when exposing the divided regions having different target exposure levels without changing the determined transmittance of the light reducing member", "a control system that changes an exposure parameter when successively exposing the plurality of divided regions defined on the second object based on the target exposure levels stored in the memory without changing the determined transmittance", "exposing the plurality of divided regions having different target exposure levels on said second object without changing the transmittance of the light attenuator" or "means for exposing the plurality of divided regions having different target exposure levels on the wafer without changing the transmittance of the light attenuator" as recited in claims 1, 10, 24 and 30, respectively.

The Office Action asserts that column 5, line 48+ and Fig. 5 of Takahashi disclose "setting a transmittance of a light reducing member disposed in an optical path of the exposure beam based on at least one target exposure level" as recited in claim 1. Applicant respectfully disagrees.

As discussed during the personal interview, this cited text of Takahashi does not describe setting the transmittance. Rather, Takahashi describes that the transmittance of the filter 16 is controlled, i.e., varied, by the light adjusting means 15 "in order to change the exposure amount in the shot." In other words, according to Takahashi the transmittance is not set, but is varied to adjust the exposure amount. Thus, this cited text of Takahashi described a second embodiment in which the exposure amount in each shot is controlled by varying the transmittance.

As recited in claim 1, when exposing the divided regions having different target exposure levels, a parameter is adjusted "without changing the determined transmittance of the light reducing member." However, as noted above and described in column 5, lines 48+ of Takahashi, the transmittance is controlled, i.e., varied, to change the exposure amount in

the shot. Therefore, according column 5, lines 48+ of Takahashi, the transmittance cannot be set as recited in claim 1.

The Office Action further asserts that column 5, line 48+ and column 7, line 1+ of Takahashi disclose that "the transmittance is determined so as to satisfy a predetermined condition when exposing a divided region having a minimum target exposure level" as recited in claim 1. Applicant again respectfully disagrees.

As discussed at the personal interview, the text in column 7, line 1+ of Takahashi does not describe determining the transmittance as asserted by the Office Action. On the contrary, this text describes calculating the optimum exposure based on film thickness measurements. There is no disclosure in column 7, line 1+ of Takahashi relating to the determination of transmittance.

During the interview, the Examiners were not able to provide any explanation of how this text allegedly relates to transmittance. As discussed at the interview, Applicant does not believe that any relation can be shown between the disclosure in column 7, line 1+ of Takahashi and transmittance.

Also, the Office Action appears to confuse the term "optimum" with the term "minimum" as recited in claim 1. As agreed at the interview, these terms are not synonymous.

Takahashi is concerned with determining an optimum exposure amount that takes into account the thickness of the film as the wafer is successively exposed. In other words, "optimum" as used by Takahashi refers to a proper exposure amount determined on the basis of the measured film thickness (col. 6, lns. 35-40). There is no discussion whatsoever of a "minimum" target exposure level in Takahashi, let alone determining the transmittance to satisfy a predetermined condition when exposing a divided region having a minimum target exposure level as recited in claim 1.

Further, the disclosure in column 7 of Takahashi does not alter the disclosure in column 5 of Takahashi. As pointed out above, column 7 relates to a fourth embodiment in which an optimum exposure amounts is calculated for each position on the wafer based on measurements of the thickness of the film. On the other hand, column 5 relates to a second embodiment in which the exposure amount is changed by controlling the light transmittance. Thus, the asserted combination of these embodiments would result in two separate process steps: (1) determining the optimum exposure at each position on the wafer based on film thickness measurements; and (2) controlling the transmittance to obtain the determined optimum exposure at each position on the wafer. Therefore, the transmittance would still be controlled, i.e., varied, rather than set, as discussed above.

At the interview, the Examiners were not able to provide any explanation of how this text could reasonably be considered to teach a modification of the fully functional second embodiment discussed above. As discussed at the personal interview, Applicant does not believe that a teaching of any modification of the second embodiment of Takahashi can be shown by the disclosure in column 7, line 1+ of Takahashi.

The Office Action relies on the disclosure in Takahashi relating to a first embodiment (column 4, line 48+) and a third (not second as stated in the Office Action) embodiment (column 5, line 58+) to allegedly teach "adjusting a parameter when exposing the divided regions having different target exposure levels without changing the determined transmittance of the light reducing member" as recited in claim 1. However, neither the first embodiment nor the third embodiment of Takahashi specifically discloses that the transmittance is not changed when exposing the divided regions having different target exposure levels. The Office Action appears to assume that the transmittance is not changed, but does not provide any basis for such an assumption.

The first, second and third embodiments of Takahashi are alternatives to each other for changing or controlling the exposure amount on the wafer. As discussed above, the second embodiment of Takahashi (column 5, line 43+) requires the transmittance to be controlled, i.e., varied. Thus, the second embodiment of Takahashi (column 5, line 48+) cannot be combined with the first and/or third embodiments of Takahashi so that adjustment of the brightness of the light source and/or adjustment of the scanning speed(s) "without changing the determined transmittance of the light reducing member" as recited in claim 1. The Office Action improperly attempts to combine the disclosures of all four embodiments of Takahashi to allegedly teach the different features recited in claim 1 while ignoring the explicit teaching of the second embodiment away from one of the claimed features.

Applicant respectfully submits that the rejection under 35 U.S.C. §102 is improper since the Office Action is relying on modifications of the disclosure, i.e., a combination of multiple embodiments that is not taught by the reference, rather than a clear disclosure or teaching of the reference. Furthermore, the alleged combination of multiple embodiments of Takahashi appears to be an improper attempt at hindsight reconstruction of Applicant's claimed combination of features. Takahashi does not disclose Applicant's claimed combination of features and, as expressed at the interview, the Office Action fails to point out any disclosure in Takahashi that allegedly teaches the modification or combination of embodiments proposed by the Office Action.

In view of the foregoing, it is respectfully submitted that claim 1 is patentable over Takahashi. Further, it is respectfully submitted that claims 2-4, 6, 8-9 and 18 are patentable at least in view of the patentability of claim 1 from which they depend, as well as for the additional features they recite.

It is also respectfully submitted that claims 10, 24 and 30 are patentable over Takahashi because, at least for the reasons set forth above, Takahashi fails to teach or suggest

every feature recited in claims 10, 24 and 30. Further, it is respectfully submitted that claims 11, 22, 25-29 and 31 are patentable at least in view of the patentability of claims 10, 24 and 30 from which they respectively depend, as well as for the additional features they recite.

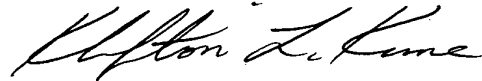
Withdrawal of the rejection is respectfully requested.

IV. CONCLUSION

In view of the foregoing, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-4, 6, 8-11, 18, 22 and 24-31 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



Mario A. Costantino
Registration No. 33,565

Klifton L. Kime
Registration No. 42,733

TECHNOLOGY CENTER 2800

NOV 10 2003

RECEIVED

MAC:KLK/hs

Attachment:
Abstract

Date: November 10, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--